

FEDERAL ENERGY FINANCING

Financial and Budgetary Implications of Government Guarantees

STAFF REPORT

OF THE

TASK FORCE ON ENERGY

OF THE

COMMITTEE ON THE BUDGET

UNITED STATES SENATE



AUGUST 30, 1976

Printed for the use of the Committee on the Budget

U.S. GOVERNMENT PRINTING OFFICE

WASHINGTON : 1976

COMMITTEE ON THE BUDGET

EDMUND S. MUSKIE, Maine, *Chairman*

WARREN G. MAGNUSON, Washington	HENRY BELLMON, Oklahoma
FRANK E. MOSS, Utah	ROBERT DOLE, Kansas
WALTER F. MONDALE, Minnesota	J. GLENN BEALL, Jr., Maryland
ERNEST F. HOLLINGS, South Carolina	JAMES L. BUCKLEY, New York
ALAN CRANSTON, California	JAMES A. MCCLURE, Idaho
LAWTON CHILES, Florida	PETE V. DOMENICI, New Mexico
JAMES ABOUREZK, South Dakota	
JOSEPH R. BIDEN, Jr., Delaware	
SAM NUNN, Georgia	

DOUGLAS J. BENNET, Jr., *Staff Director*

JOHN T. MCEVOY, *Chief Counsel*

ROBERT S. BOYD, *Minority Staff Director*

W. THOMAS FOXWELL, *Director of Publications*

TASK FORCE ON ENERGY

FRANK E. MOSS, Utah, *Chairman*

ERNEST F. HOLLINGS, South Carolina	J. GLENN BEALL, Jr., Maryland
JOSEPH R. BIDEN, Jr., Delaware	JAMES A. MCCLURE, Idaho
SAM NUNN, Georgia	PETE V. DOMENICI, New Mexico

LEWIS J. ASHLEY, *Task Force Coordinator*

LETTER OF TRANSMITTAL

UNITED STATES SENATE,
TASK FORCE ON ENERGY,
COMMITTEE ON THE BUDGET,
Washington, D.C. August 30, 1976.

Hon. EDMUND S. MUSKIE,
Chairman, Committee on the Budget, U.S. Senate.

DEAR SENATOR MUSKIE: The President's budget for fiscal year 1977 included proposals for "off-budget" energy funding that far exceeded those on-budget proposals of the Administration. The Budget Committee did not have adequate information on the appropriate budgetary treatment of these "off-budget" proposals and their relationship to other energy spending at the time the First Concurrent Resolution was being developed last spring. Accordingly, the Resolution the Committee recommended and the Congress approved in May accorded a high priority to on-budget energy proposals with the understanding that the "off-budget" proposals would be reviewed in light of the Budget Resolution and later information.

Major energy legislation now before the Congress is designed to assist in financing energy production and developing new energy technologies. Two key bills under consideration concern uranium enrichment and synthetic fuels. The Federal financial incentives included in these proposals are basically Government guarantees to help private ventures borrow in capital markets by sharing with the private sector the risk of project failure. These incentives which include loan, price, and project guarantees constitute contingent liabilities of the Federal Government that must be honored. However, the Administration proposes that they appear only partially on-budget or not at all.

Such contingent liabilities tend to reorder priorities, may have an impact on our economy and may require considerable future expenditure of the public's money. Thus, it is important to understand the financial commitments that will be required to carry out such programs if the Congress decides to approve them. Toward this end, this staff report, prepared at the request of the Committee's Energy Task Force and based in part upon the Task Force hearings on Financing Energy Development held on July 26 and 27, examines the above mentioned Federal financial incentives, reviews their financial and budgetary implications, and presents options to serve as a basis for the Budget Committee's actions in developing the Second Concurrent Resolution which the Congress must adopt in September.

Along with thanking the Task Force, I also want to express special appreciation to: Terence Finn, Arnold Packer, Dan Twomey, Donald Campbell, Charles McQuillen, and Heather Ross of the Budget Committee staff; and to Nicolai Timenes, David Montgomery and Richard Dowd of the Congressional Budget Office without whose efforts this report would not have been possible.

Nothing in this study should be interpreted as representing the views or recommendations of the Budget Committee or any individual member thereof.

Sincerely,

FRANK E. MOSS, *Chairman.*

Digitized by the Internet Archive
in 2013

CONTENTS

	Page
Letter of transmittal.....	III
Summary	VII
<i>Chapter:</i>	
I. Introduction	1
II. Financing energy development.....	3
III. Federal guarantee mechanisms as incentives.....	7
IV. Loan guarantees: A special problem.....	11
V. Two major energy financing proposals.....	19
VI. Budgetary treatment of guarantee mechanisms.....	27
VII. The Second Concurrent Resolution.....	31

SUMMARY

Increasingly, the Federal Government is being asked to assist in the financing of energy development projects. This assistance is rendered primarily through various guarantee mechanisms, most notably loan guarantees, price guarantees, and project guarantees.

The Budget Committee is concerned with the growing use of these guarantees for energy and other activities. While Federal guarantees appear to be cost free, they in fact can be costly tools of public policy. Guarantees may reallocate capital from one economic sector to another and in turn drive interest rates up in sectors which lose capital. Should defaults occur, they can have a major impact on budget totals. In addition, loan, price, and project guarantees can affect national priorities by influencing the allocation of investment funds.

The Budget Committee is also concerned with the budgetary treatment of these guarantee programs. How these programs are scored—there seems to be no uniform pattern—can affect not only the budgetary totals but also the decision to establish such guarantees.

FINANCING ENERGY DEVELOPMENT

Underlying the increasing use of guarantees in the energy area is the need to finance new sources of energy. So far, the private sector has for the most part been hesitant to develop new energy sources such as synthetic fuels, the sun, and geothermal heat. The obstacles to private investment are the scale of the capital required, the uncertainty of future prices for petroleum energy, technological uncertainty, and regulatory policy. By making use of guarantee mechanisms, the Government enters the private financial market in such a way as to reduce or remove the risks associated with these obstacles thereby allowing the private sector to proceed with the capital investment.

When the Government uses such guarantees, private participants in a selected venture are protected from some or all of the effect of its economic failure. By employing such guarantees direct Federal expenditures appear to be avoided and a major private role is assured. At the same time, the Government assumes most of the risks associated with the enterprise. These risks must be considerable because the investment community has chosen not to provide the capital.

FEDERAL GUARANTEE MECHANISMS AS INCENTIVES

Although the Budget Committee's Energy Task Force has focused on guarantees proposed to finance energy development, guarantees were also considered in general as tools to carry out public policy.

The private market allocates resources according to calculations of the risks and the potential returns attributed to alternative projects.

Because these calculations focus on the flow of funds to private investors, outcomes of market decisions may not conform with perceptions of the national interest. Public policy often promotes the allocation of resources based on calculations of costs and benefits to the economy as a whole. Private investors evaluate a project more narrowly than would be appropriate for Government. Projects that are in the national interest but have an unfavorable risk/return ratio are not ordinarily undertaken by private industry.

If Government is effectively to stimulate private investment in a desired project the Government must first analyze the role expected profits and risks have played in hindering that investment. Government action to reduce uncertainty will not stimulate investment if a project is unattractive primarily because its expected profits are too low. On the other hand Government action which increases a project's expected profits may still not make it attractive to investors if the risks of failure are too great.

Unlike tax incentives, for example, which are available to all investments that satisfy stated criteria, these guarantees are made available only to selected projects. Thus, they are appropriate to remedy specific obstacles to investment, rather than obstacles arising from general economic conditions.

LOAN GUARANTEES: A SPECIAL PROBLEM

Because loan guarantees are a mechanism that is increasingly popular—net new loans guaranteed now average \$48 billion each year—and because new proposals are believed to have a different impact on the budget and on the economy than earlier guarantee programs, they deserve special consideration. From the perspective of their budgetary impact, there are three types of loan guarantees, those designated to:

- (1) *Correct Imperfections in the Capital Markets.*—The earliest guarantee programs were created because lenders were unable to estimate the risks attached to important types of relatively small loans.
- (2) *Allocate Credit to Classes of Marginal Borrowers.*—Federal guarantees have also been used to help extend credit to small borrowers who are demonstrably greater than ordinary risks.
- (3) *Finance Discrete Ventures by Allocating Credit.*—More recent programs have made use of loan guarantees in order to allocate private credit to specific projects favored by public policy.

In type 3 loan guarantees the loans are often large loans to one or a few borrowers who may face common risks. This category includes the loan guarantees for energy development. For this type of guarantee it may be impossible to anticipate the magnitude and timing of outlays. Moreover, deciding the proper budgetary treatment of these guarantees is especially difficult. Many of the reasons for concern inherent in type 3 loan guarantees are found as well in project guarantees such as those proposed in the Nuclear Fuel Assurance Act, an \$8 billion measure that has passed the House and is pending before the Senate.

Federal loan guarantees do more than simply change calculations of risk. By assuring investors that the full faith and credit of the Government stands behind a loan, guarantees tend to weaken the process by which proposed activity is elevated. Loan guarantees, and for that matter, price and project guarantees, do little to ensure that the disciplines of the private market will come to bear on selected projects.

FEDERAL FINANCING BANK

Guaranteed obligations may be purchased by the Federal Financing Bank (FFB) which was created in 1974 to coordinate the impact of Federal agency debt issues on the capital markets. The FFB is now the primary investor in guaranteed loans. By using the FFB a Federal agency can finance large loans more cheaply and easily than if funds had come from private lenders. When the Federal Financing Bank purchases a guaranteed obligation the Government is no longer just a guarantor but the direct lender. The FFB can buy all of an obligation which may only be guaranteed in part. Since the FFB finances its investments by issuing obligations to the Treasury, Treasury borrowing increases by the full amount of the loan. This undercuts the argument that partial guarantees force the private sector to bear some risks inherent in a proposed project.

Loan guarantees have consequences for both Government decision making and the private sector. Such guarantees may result in Federal outlays although neither the timing nor the magnitude of these outlays can be forecast. Another Governmental consequence, stemming from the mistaken belief that loan guarantees do not have an impact on the budget, is that a proposal may get inadequate review with resulting distortions in the allocation of public resources. Consequences for the private sector may include increasing the probability of default and of premature shutdowns and higher interest rates for borrowers who do not benefit from the guarantees.

MAJOR ENERGY FINANCING PROPOSALS

Two major energy financing proposals may soon be before the Senate. They are the Nuclear Fuel Assurance Act (H.R. 8401) and the Synthetic Fuels Commercialization Program (H.R. 12112). These bills provide for loan guarantees and project guarantees. Many observers believe that the latter bill will require price guarantees as well. Because of the legislation's impact on national priorities and on the budget, as well as the issues they raise regarding budgetary treatment, the Energy Task Force believes that the bills require the Senate's careful consideration.

BUDGETARY TREATMENT OF GUARANTEE MECHANISMS

Because the budget is a decisionmaking tool, it is important that the full scope of Federal activity be reflected, including the nature and extent of the Government's liabilities.

Loan guarantees are specifically excluded from the definition of "budget authority" provided in Section 401(c)(2)(C) of the Congressional Budget Act of 1974. This "off-budget" characteristic of

loan guarantees has meant that guarantee programs tend not to compete with regular spending programs for scarce Federal dollars. This has contributed to the growth in number of guarantee programs, a growth which James L. Mitchell, an Associate Director of OMB, termed "astonishing."

Now that net new loans guaranteed annually average \$48 billion, a problem is how best to include potential cost to the taxpayers in budget decisions. Placing loan guarantees "on budget" facilitates the control of public policy through the budget but provides a seriously exaggerated picture of the size of the budget.

An alternative for treating loan guarantees in the budget is to estimate each year the amount of Federal payments likely to result from loan guarantees and have that estimated amount appear in the budget as budget authority, accompanied by the associated estimate of outlays. The full exposure of the guarantees would not be reflected in the budget, only the amount of expected expenditures. This is the treatment being accorded the proposed synthetic fuels bill. For 1977, H.R. 12112 (as reported by the Committee on Science and Technology), if enacted, would show on-budget \$515 million in budget authority and \$15 million in outlays for a \$2 billion exposure through guarantees of Federal funds in the first year.

Price guarantees do not pose too great a problem in terms of budgetary treatment. Authority to implement a price guarantee program is requested through the normal authorization and appropriations process, funds from which would appear in the budgetary totals. The difficulty with price guarantees is not budgetary treatment but rather budgetary control. Price guarantees are entitlement programs. Once in place they can make demands upon the budget that must be honored.

BUDGETARY TREATMENT OF PROJECT GUARANTEES

The budgetary treatment of project guarantees can best be discussed in terms of specific proposals. The \$8 billion in project guarantees contemplated by the Nuclear Fuel Assurance Act could be treated in several ways. One option would be to score the full \$8 billion as budget authority, an approach akin to scoring the full exposure of a loan guarantee program. Another option would be to score the full value of each project as the guarantee is ratified. Still another option would be to score partial amounts, representing the actual Government liability year-by-year, as the liability grows. A different way of treating the bill would be to score some fraction of the \$8 billion as budget authority based upon an estimated rate of default greater than zero. A final option would be to score nothing at all because the liabilities extended by the Nuclear Fuel Assurance Act are *contingent* liabilities. This final option is the one the Administration believes is appropriate. All the other options, of course, would affect the budget totals. Thus, if the bill were enacted and the Administration's position rejected, budget authority would be created and reflected in budget totals.

Chapter I. INTRODUCTION

Increasingly, the Federal Government is being asked to assist in the financing of energy development projects. This assistance is rendered primarily through various guarantee mechanisms, most notably loan guarantees, price guarantees, and project guarantees. Congress, for example, recently enacted a \$2 billion loan guarantee program to finance energy conservation projects. The Administration is proposing an \$8 billion uranium enrichment program that contemplates specific project guarantees, and some observers believe that the proposed synthetic fuels commercialization program will not be viable without price guarantees.

The Budget Committee is concerned with the increasing use of these guarantee mechanisms. Loan guarantees, price guarantees, and project guarantees are tools of Federal policymaking that at first glance appear to be cost free. When a guarantee is extended, the Government incurs no immediate expenditures and the possible future spending is not included in the budget totals. Moreover, unlike typical spending and tax proposals, guarantee mechanisms are neither displayed in one place nor reviewed in the context of competing programs. Even regulatory proposals are typically scrutinized by affected interest groups with a view to illuminating costs. But the costs of guarantee mechanisms are not readily apparent.

COSTLY POLICY TOOLS

In fact, loan guarantees, price guarantees, and project guarantees can be costly policy tools. They may reallocate capital, and drive up interest rates in sectors which receive less capital. Some other projects—possibly worthwhile projects—may be unable to secure financing. They thus have an overall impact on the economy that should not be ignored. They also can have a major impact on budget totals, should a default occur or price support become necessary.

Certainly no economic activity of the Federal Government should go unchallenged nor should the potential for spending be free of critical examination. In fulfilling its responsibilities under the Congressional Budget and Impoundment Control Act of 1974 the Committee on the Budget can provide some of the necessary focus and review.

This responsibility extends also to questions of national spending priorities. The task mandated by Section 301(a) of the new Budget Act to set forth in the Concurrent Resolution an estimate of budget outlays and an appropriate level of new budget authority by the functional categories of the budget is in effect a setting of national priorities. This allocation of fiscal resources along functional lines allows the Senate and House to debate such priorities. The amounts contemplated for energy expenditures and the urgency underlying the devel-

opment of energy supplies make Federal spending for energy—actual and potential, direct and indirect, current and future—a priority item to be considered in formulating the functional targets of the Budget Resolution.

TECHNICAL NATURE OF GUARANTEE MECHANISMS

The responsibility of the Budget Committee also extends to the more technical issues of budgetary treatment. How various forms of Federal spending such as guarantee mechanisms are scored in the budget can be a complex subject requiring knowledge of budget concepts and past budgetary procedures. For example, the most appropriate means to account in the budget for the \$8 billion in project guarantees authorized under the pending Nuclear Fuel Assurance Act (H.R. 8401) is particularly complicated. Unfortunately, past practices offer no clear guide on how best to treat guarantee mechanisms. There is no “traditional way” to account for loan, price, and project guarantees in the budget totals. Yet how these guarantees are scored can influence not only budget totals but also the decision whether to establish such guarantees. The technical nature of guarantee mechanisms for financing energy and the importance of their budgetary treatment thus requires the Committee on the Budget to review the various mechanisms that are under consideration.

PURPOSE AND ORGANIZATION OF REPORT

This staff paper reviews the budgetary impact of these mechanisms and examines their financial implications. The paper is intended to serve as background for the Senate Budget Committee's markup of the Fiscal Year 1977 Second Concurrent Resolution. It contains no recommendations but does present options that the Committee may wish to consider in developing the Resolution. The paper also is intended to contribute to the Committee's major study on the use of Federal financial guarantees. Such guarantees are by no means limited to the area of energy. They are an increasingly important element of public policymaking that deserves far more attention than is possible in this paper. By reviewing the impact on the economy and the effect on national priorities of these financial guarantees, the Committee's major study can focus on a dimension of public policy that has by and large escaped comprehensive public scrutiny.

The organization of this staff report is relatively simple. Chapter I has noted that guarantee mechanisms are increasingly being used to assist in the financing of energy development projects and that the Committee on the Budget has a responsibility to consider this activity. Chapter II discusses the reasons why these guarantee mechanisms are deemed necessary and lists several recent examples of Federal guarantees. Chapter III discusses how guarantee mechanisms serve as incentives for private investment. Because loan guarantees are a prevalent form of Federal guarantees, Chapter IV reviews how these guarantees operate and what different types of loan guarantees there are. Chapter V discusses two major energy financing proposals, synthetic fuels and the Nuclear Fuel Assurance Act, that may soon be before the Senate for consideration. Chapter VI reviews the budgetary treatment of guarantee mechanisms while Chapter VII, the final chapter, relates this treatment to the 1977 Second Concurrent Resolution.

Chapter II. FINANCING ENERGY DEVELOPMENT

Underlying the increasing use of guarantee mechanisms to assist in financing energy development is a desire to develop new sources of energy. These sources include synthetic fuels, the sun and geothermal heat. Together with an expansion of present nonpetroleum based energy sources such as nuclear power and coal, they can—if new technologies are developed and adequate funding is forthcoming—reduce our vulnerability to the petroleum exporting nations while providing increased domestic energy at reasonable cost to the American consumer.

The task of developing these energy sources will require considerable financial resources. Investments from both the private sector and the public sectors are necessary. Exactly where and how the two sectors interface is not yet clear. What is clear is that both must focus their attention and direct their resources to the common task of assuring that our energy needs will be met.

Obstacles to Private Investments

So far the private sector has been unwilling to finance many of the projects which seek to develop these new energy sources. Several obstacles to investment have emerged.

CAPITAL REQUIREMENTS

The first obstacle is the scale of the capital required. The cost of commercially developing synthetic fuels, geothermal heat, nuclear power, coal and the almost limitless energy of the sun is substantial. The Congressional Budget Office estimates that the total investment in energy production needed to keep petroleum imports in 1985 at current levels is \$560 billion. Individual projects are also costly. A single high Btu synthetic gas plant will cost approximately \$1.0 billion. A single gas centrifuge plant to enrich uranium will cost over \$3.0 billion. To place such costs in context, we must remember that in 1975 only 160 U.S. corporations had total assets in excess of \$1.0 billion. While private industry has financed extremely large projects—the Trans-Alaskan pipeline was financed without Federal assistance at a cost of \$7.7 billion—the scale of financing energy development will test the resources of America's capital markets.

PRICE UNCERTAINTY

A second obstacle to the private sector in financing the development of new energy sources is the uncertainty in the future price of petroleum energy. The semi-controlled nature of domestic oil and gas prices plus the leverage of OPEC in establishing the price of world oil creates a climate that hinders energy investment. Prudence requires that a

reasonable rate of return on investment plus the amortization of debt be assured before committing risk capital. Investors will be reluctant to risk capital in new energy projects if external price policies can undercut their economic viability. For example, as long as OPEC can suddenly drop petroleum prices below what synthetic fuel plants must charge, the capital to finance these plants will not be forthcoming. The risk of failure is simply too great.

TECHNOLOGY UNCERTAINTY

The third obstacle is technological uncertainty. The technologies to derive sufficient energy at reasonable costs from synthetic fuels, geothermal heat, the sun and even some forms of nuclear power do not yet fully exist. While we can be confident that our research, development and demonstration programs will ultimately be successful, the outcome is not preordained. Advances in technology do not occur simply from spending money. Ingenuity, perseverance and luck are also necessary, and even then we may not achieve our goals. Moreover, the advances in energy technology that we need are substantial. In some instances, like synthetic fuels, quantum steps are necessary. Investors understand that risks are associated with technological advances. In the energy field they perceive these risks as another reason to exercise caution in exposing capital.

REGULATORY POLICY

Another obstacle to financing energy development is regulatory policy. Like other areas of public policy, energy is beset by a wide array of regulatory agencies whose rules and regulations can mean the difference between failure and success. The Federal Energy Administration, the Environmental Protection Agency, the Federal Power Commission, the Nuclear Regulatory Commission, the Interstate Commerce Commission, the Occupational Health and Safety Administration and the Department of Justice are all Federal agencies whose responsibilities encompass the energy field. Their rules and regulations are supplemented by those of State and local agencies whose responsibilities are similar. These agencies generally perform a useful task in our society, but a side effect of this regulatory environment is a web of obstacles that hinders development. This web acts as an impediment to financing energy projects. Potential investors are aware of the many opportunities for delay. They are aware also that a seemingly arbitrary decision on the part of a regulatory agency can curtail a project, well after capital has been invested.

Government Action to Assure Future Energy Supplies

Taken together these obstacles have inhibited the private sector from investing in the development of new energy sources. Given the priority that such energy development constitutes, the public sector—primarily the Federal Government—believes it must act to assure that future energy supplies are sufficient. One course of action would be for the Government to make the necessary investments directly. This presumably would ensure that energy development would occur but would severely tax the fiscal resources of the Federal Government. It might also unalterably revise the boundaries in this country between the private and public sectors.

Another course of action would be for the Government to make use of available mechanisms that enable the private sector to overcome the obstacles to investment. The Government would enter into the private financial market in such a way as to reduce or remove the risks to financing energy development. This would allow the private sector to proceed with the necessary capital investment.

Some financial mechanisms that allow the Government to so act are loan guarantees, price guarantees and project guarantees. By using such guarantees, the Government assures the ultimate financial viability of the particular enterprise to which the guarantee is extended. Moreover, by employing such guarantees, direct Federal expenditures appear to be avoided and a major private role is assured. At the same time, the Government assumes most of the risks associated with the enterprise. These risks must be considerable because the investment community has chosen not to provide the capital. (Were no risks involved, guarantees would not be needed.) If the enterprise does not succeed, the guarantees are invoked and the Government must absorb some of the loss. With energy development projects, these losses could entail substantial budgetary expenditures.

Increased Use of Federal Guarantees

Energy legislation utilizing these guarantee mechanisms is appearing with increasing frequency. In 1975 Congress enacted the Energy Policy and Conservation Act. Section 102 of this act established a \$750 million loan guarantee program to develop new underground coal mines. The year before, Congress enacted the Geothermal Energy Research, Development and Demonstration Act which established a loan guarantee program for developing geothermal resources. This act placed no limit upon the extent of liabilities.

This year Congress has enacted the Energy Conservation and Production Act. This law, which extended the Federal Energy Administration until December 31, 1977, also established a \$2 billion loan guarantee program for investments in energy conservation. Currently pending before Congress is a version of Administration's proposal for a Synthetic Fuels Commercial Demonstration Program (H.R. 12112). This program contemplates a \$2 billion loan guarantee program as well as a program of price guarantees. Indeed, many observers believe that the price guarantees are essential to the program's success. Also pending is the Nuclear Fuel Assurance Act (H.R. 8401), a version of the Administration's proposal to extend \$8 billion in project guarantees to private uranium enrichment plants. This act has passed the House and is now before the Senate.

Chapter III. FEDERAL GUARANTEE MECHANISMS AS INCENTIVES

Although the Task Force attention focused on proposals included in pending energy legislation, guarantees were also considered in general as tools to carry out public policy.

The private market allocates resources according to calculations of the risks and the potential returns attributed to alternative projects. Because these calculations focus on the flow of funds to private investors, outcomes of market decisions may not conform with perceptions of the national interest. Public policy often promotes the allocation of resources based on calculations of costs and benefits to the economy as a whole. Private investors evaluate a project more narrowly than would be appropriate for Government. Projects that are in the national interest but have an unfavorable risk/return ratio are not ordinarily undertaken by private industry. Three factors can lead to the private allocation of resources in a way which is not optimal for society as a whole:

1. A private investor cannot capture enough of the economic benefits associated with a project.
2. A project can have non-economic benefits accruing to the public.
3. Private firms may perceive risks differently than the Government such as the risk of adverse regulatory decisions.

By altering private risks and returns in specific projects the Government can play a powerful role in altering the outcomes of private market decisions. However, for public action effectively to stimulate private investment in a desired project, the Government must first analyze the role expected profits and risks have played in hindering that investment. Government action to reduce uncertainty will not stimulate investment if a project is unattractive primarily because its expected profits are too low. On the other hand, Government action which increases a project's expected profits may still not make it attractive to investors if the risks of failure are too great.

INCENTIVES FOR SPECIFIC VENTURES

Three mechanisms are now being proposed to provide incentives for investment in energy development: loan guarantees, price guarantees, and project guarantees. By their nature, the guarantees considered in this report are specific to an individual project or a class of projects. Unlike tax incentives, for example, which are available to all investments that satisfy stated criteria, these guarantees are made available only to selected projects. Thus, they are appropriate to remedy specific obstacles to investment, rather than obstacles arising from general economic conditions.

Loan Guarantees

The Federal Government can increase the attractiveness of an investment to a lender by removing or reducing his risk of default with a guarantee that principal and interest will be paid. The attractiveness of an enterprise can be greatly increased also for stockholders or other owners by making use of "non-recourse" loan guarantees which provide that, in the event of default, the Federal Government will only be able to require payment from the assets of the guaranteed project itself and not from the general assets of the participating firms. The extent to which risks to stockholders are reduced depends on the fraction of total project investment eligible for loan guarantees.

If investors are confident of prompt payment in the event of a default, they will view guaranteed loans as near equivalents to obligations of the U.S. Government. Guaranteed loans, therefore, usually have interest rates lower than those normally required even of the highest quality private borrowings of comparable maturity and terms. Recipients of loan guarantees may be required to pay a fee to the Government for the risk it has assumed. Unless that fee is large enough to cover the expected cost of defaults, a loan guarantee constitutes a subsidy to the borrower.

OBSTACLES IN THE FINANCIAL MARKETS

Although loan guarantees can alter the perception of risk and return by both borrowers and lenders, they are most appropriately used when factors in the financial markets are the major obstacle to a desired investment.

H.R. 12112, now pending in the House would authorize loan guarantees for synthetic fuel production.

Price Guarantees

In general, these guarantees replace an uncertain future in which a product must be sold at prices set by changing market forces and substitute a certain future in which the product can be sold at or above a price established before a project is undertaken. They can be used (1) to subsidize production when market prices are expected to be too low to cover costs plus an adequate profit; and (2) to shift the risks of changes in market prices from the private producer to the Government. Depending on its design, a price guarantee can have various effects on investment decisions and Government costs. For example, a guarantee may specify the price that a producer would receive, with the Government paying the difference if the market price is below the guarantee price and collecting the difference if the market price exceeds the guaranteed price. On the other hand, the guarantee may place a floor on prices, with the Government making up the difference if market price falls below the floor but the private producer retaining all profits if market prices exceed the floor.

The price guarantee also contains an element of subsidy unless two conditions are met:

1. The guaranteed price must equal or be less than the expected market price.

2. The Government must share in profits when unexpectedly high prices prevail to the same extent that it shares losses when low prices prevail. This could be done, for example, if the Government purchases the product in all events at the guaranteed price and resells it at market price.

OBSTACLES IN THE SALES MARKETS

Price guarantees at an appropriate level can be effective if a major hindrance to private investment is either uncertainty about the market in which products must be sold or certainty that market prices would be too low. Price guarantees do nothing to reduce uncertainty associated with the costs of production unless the guaranteed price is set on a cost-plus basis. If the guaranteed price is set by a formula that excludes costs of production, private investors bear all risks inherent in completing a plant that can achieve planned output on schedule and under budget.

Two versions of H.R. 12112 authorize price guarantees to synthetic fuel producers.

Project Guarantees

The Government can also provide a broad "safety net" under all of the private participants in a desired project. Under a project guarantee, the Government commits itself to step in when continuation of a project becomes undesirable for private participants, to assume the obligations incurred in the operation of the project, to repay lenders, and, if certain conditions are met, to compensate investors. These, of course, are very broad forms of guarantee which significantly reduce or remove the private parties' exposure to risks inherent in future market prices, and in product and process technology. They share many of the budget problems of loan guarantees which are discussed in the next chapter.

Such incentives are contemplated by the Nuclear Fuel Assurance Act (H.R. 8401).

Chapter IV. LOAN GUARANTEES: A SPECIAL PROBLEM

Although loan guarantees have long been used to encourage private lenders to invest in accordance with Federal objectives, they have characteristics which can create significant problems for public policy. These guarantees deserve special consideration. One reason is that the use of loan guarantees has increased rapidly in recent years. Net new loans guaranteed now average \$48 billion each year. By the end of FY 77, guaranteed and insured loans outstanding—for all purposes—are expected to total \$235.1 billion. Guaranteed loans outside the budget in FY 1977 are estimated at \$174.6 billion. Outlays for existing “off-budget” programs are estimated at \$11.1 billion for the same period. Another reason is that some of the recent guarantee programs and proposals have, or are likely to have, a very different impact on the Federal budget and on the economy from that of earlier guarantee programs.

POWERFUL POLICY TOOL

As it reviewed ways to budget Federal incentives for energy development, the Task Force had to consider loan guarantees carefully. It became clear that loan guarantees are a powerful policy tool and their use may have unforeseeable fiscal consequences. Certain characteristics of loan guarantees call for careful review so that guarantees, when inappropriate, are not used to achieve desirable ends.

This chapter of the staff report will highlight several features of guaranteed loans. It considers, first, the three types of loan guarantees, and second, the operation of loan guarantees. The Congressional Budget Act's exclusion of loan guarantees from the definition of “budget authority” is an important feature that will be treated in a later chapter.

Types of Loan Guarantee Programs

Loan guarantee proposals have greatly changed in purpose and design since the 1930's when they were first used extensively. Programs using the mechanism vary widely from one another because each was designed to fit the characteristics of a particular credit market and the politics of a specific time. Their treatment in the budget has been guided by no consistent theory. However, from the perspective of their budgetary impact there are three types.

TYPE 1: CORRECTING IMPERFECTIONS IN THE CAPITAL MARKETS

The earliest guarantee programs were created because lenders were unable to estimate the risks attached to important types of lending.

For example, during the depression widespread foreclosures and bankruptcies were triggered because homes tended to be financed with

short-term loans. Federal policymakers were convinced that, if homeownership were to be possible for most families, general acceptance had to be created for the self-amortizing long-term residential mortgage covering 80 percent of a property's value. Bankers, however, had no experience with that form of lending and were reluctant to offer acceptable interest rates. So, FHA mortgage guarantees were instituted in 1934 in the conviction that the actual risk involved in the new form of mortgage was significantly less than mortgage lenders were estimating. By assuming risks which otherwise would be borne by lenders, the Government reduced the cost of borrowing for consumers and rental investors and provided the private market with information on the risks involved in this federally preferred form of lending. The strategy was immensely successful. Lenders were encouraged to adopt the new mortgage instrument, eventually even without Federal guarantees.

The budgetary impact of these guarantees has been negligible. The programs involved many small loans with liens on property and were designed to be actuarially sound. Defaults in FHA's basic single family insurance fund have been about 5 percent of total guarantees—so low that fees and premiums have more than covered the fund's losses and other expenses. These programs thus involve neither Federal budget authority nor outlays.

TYPE 2: ALLOCATING CREDIT TO CLASSES OF MARGINAL BORROWERS

Federal guarantees have also been used to help extend credit to borrowers who were demonstrably greater than ordinary risks. Higher risks resulted from a greater than normal probability of default, or from the lack of acceptable collateral. So, Federal agencies assumed risks which private insurers were unwilling to accept at socially tolerable rates of interest. For example, loans in urban renewal areas were guaranteed to help coordinate private investment with public efforts. Residents of these areas typically had not established a record of credit worthiness and the future value of properties in these areas was too uncertain. These guarantees were not a simple extension of prior FHA activity. In fact, they caused considerable tension between the older FHA personnel—committed to actuarially sound guarantee programs—and the newer urban renewal staffs committed to the attainment of social goals.

Loans guaranteed under these programs usually are numerous and relatively small. It is thus possible to accumulate experience upon which to estimate and thus provide a reserve for defaults. These programs typically involve social objectives which hinder their operating on an actuarially sound basis. The guarantee also is often combined with interest subsidies, operating subsidies or other incentives. These programs, therefore, do lead to Federal outlays.

BOTH TYPE POOL RISKS

Because Type 1 guarantees require sharply different treatment in the budget from those in Type 2, the distinction is an important one to make. However, these two types of guarantee programs share important characteristics. They have usually involved large numbers of relatively small loans. With the guarantees, the Government pools risks across many transactions. If the risk of default is randomly distributed

among individual transactions, the statistically expected cost of defaults can approximate the actual costs. Government pooling of risks may be especially appropriate when defaults are not random but are heavily influenced by regional economic shifts or by cyclical swings in the economy. For such cases the lessons of experience come more slowly and less clearly than in the case of risks that are fairly uniform nationally or over long periods of time. These characteristics of pooled-risk from the third.

TYPE 3: FINANCING DISCRETE VENTURES BY ALLOCATING CREDIT

Other programs have made use of loan guarantees in order to finance specific public programs by allocating private credit rather than by on-budget spending. The loans being guaranteed are often very large loans to one or a very few borrowers who may face common risks. This of course is the category in which the loan guarantees for energy development fall. Many of the reasons for concern inherent in Type 3 loan guarantees are found as well in broader project guarantees such as are proposed in the Nuclear Fuel Assurance Act.

TIMING OF OUTLAYS

For this type of guarantee it may be impossible to anticipate the magnitude and timing of outlays. When guaranteed loans are for single purpose plants the Federal guarantor agency may be unable to recoup a large proportion of the guaranteed payments by reselling assets after a default. Outlays may also be driven above guarantee amounts by the need to manage a troubled project to which a major Federal commitment has been made. Finally, the timing of major outlays—a central issue for Federal fiscal policy—can rarely be estimated when such a guarantee program is being considered.

In the case of Type 3 guarantees, deciding the proper treatment of budget authority is especially troublesome. If every loan guarantee program were required to establish through appropriation a reserve for defaults equal to the best estimates of its expected outlays, one could argue that the probable budget impact of all loan guarantee programs as a group would best be reflected. But, rather than being a solution, this would bring great pressure on program advocates to place a low estimate on the probability of defaults. If defaults occurred, the existence of a reserve covering only a fraction of the needed outlays would solve few problems; on the other hand, if the program succeeded, *none* of the budget authority would be used.

Operation of Loan Guarantees

SOURCES OF FINANCING

When the use of loan guarantees is being advocated, it is often claimed that they provide a relatively mild form of Federal intervention in a basically private transaction. It is implied that the soundness of a proposed venture is assured because a participating private borrower will have to deal with private lenders. This suggests that the Government guarantee merely changes calculations of risk in a transaction similar to most others in the private sector. This argument is

based on the premise that private lenders will be motivated to evaluate the prudence and strength of the project being financed. That premise may not be valid. Even when banks or other lending institutions play an active role in loan guarantee programs, they tend to be more concerned about evaluating the terms of the Government guarantee than evaluating the merits of the activity. For example, private institutions play an active role in loan guarantee programs which require the origination and servicing of large numbers of small loans. However, even in these cases private lenders may take no role in weeding out ill-conceived ventures. The involvement of private lenders in the Section 235 Homeownership Assistance Program did not prevent widespread defaults resulting from questionable loans.

SIMILAR TO FEDERAL AGENCY DEBT

Private lenders may be even less interested in evaluating a venture which involves a Type-3 loan guarantee. Programs guaranteeing large corporate borrowing have typically involved Federal guaranteed corporate bonds sold in the securities market. In the past, these guaranteed loans were often so designed that investors treated them as if they were not the debt of a private borrower, but rather the debt of a Federal agency. For example, announcements of the debt issue prominently displayed information about the Federal agency which gave the guarantee—the identity of the private firm receiving the proceeds of the debt issue was of little interest to the investors. Once the trustworthiness of the guarantee mechanism assured investors that the full faith and credit of the Federal Government stood behind the loan, the nature of the project being financed was almost of no concern. Thus, loan guarantees may have little value as a way to insure that the disciplines of the private market will come to bear on the operations of selected projects. Understanding the role of the Federal Financing Bank may make this even clearer.

FEDERAL FINANCING BANK

The Federal Financing Bank (FFB) was created in 1974 in order to coordinate the impact of Federal agency debt issues on the capital markets. Because many guaranteed loans differed only technically from Federal agency obligations, the FFB was authorized to purchase any obligation guaranteed in whole or in part by an agency of the Federal Government. The FFB has now become the primary investor in guaranteed loans and is expected to acquire 63 percent of the net loans guaranteed by Federal agencies in fiscal year 1976. The Federal Financing Bank charges interest which is only $\frac{1}{8}$ of 1 percent above the yield of comparable Treasury securities. Therefore, by using FFB, a Federal agency can finance a very large guaranteed loan much more cheaply and easily than if funds had come from private lenders.

When the FFB purchases a guaranteed obligation, the Federal Government, of course, is no longer just a guarantor, it becomes the direct lender. Note that the FFB buys *all* of an obligation which may only be guaranteed in part. For example, a private borrower can sell the FFB, let's say, \$100 million in bonds of which only \$80 million may be guaranteed by some Federal agency. Since the FFB finances its investments by issuing obligations to the Treasury, Treasury borrowing would increase by the full \$100 million and not just by the \$80 million covered

by the Federal guarantee. This undercuts the argument that partial guarantees force the private sector to bear *some* risks inherent in a proposed project and therefore to carry out its own evaluation of the project's merits.

As will be discussed in a later chapter, loan guarantees can be used as a way to provide a project with Federal financing which does not appear in the Federal budget.

USEFUL ROLE OF FFB

It would be misleading to imply that the FFB purchase increases the impact of a guaranteed loan on the capital markets. The guaranteed borrowing, without FFB, could come to the private markets but at higher cost. This FFB role is useful in coordinating the impact of guaranteed borrowing on the capital markets. Understanding the FFB actively should highlight the need for careful Government scrutiny of new guarantee programs.

CONSEQUENCES FOR GOVERNMENT DECISIONMAKING

UNCONTROLLABLE OUTLAYS

A loan guarantee is a contingent liability of the Government that must be honored. A guarantee for a loan that defaults results in Federal outlays. Therefore, the budget will rise automatically unless an appropriate contingency arrangement is made to cover such an eventuality. However, neither the timing nor the magnitude of resulting outlays can ordinarily be forecast when a guarantee program receives legislative approval. Once a guarantee is given, the timing of any outlays is largely out of Government control. As James Mitchell, an Associate Director of OMB, mentioned in his testimony to the Committee's Energy Task Force, with loan guarantees the problem of "trying to estimate a cash disbursement in the future is a very, very tough question."

DANGER OF INADEQUATE REVIEW

By using loan guarantees, Government action supplants the risk and return calculations through which the private economy evaluates a proposed project and therefore the Government stimulates the flow of credit into a favored project. As we have noted, there are many instances in which the decision of the private market *should* be overridden because it does not conform with the public interest. When this intervention is made, however, the Government must substitute its own evaluative processes for those of the private market. No major economic activity of the Government should go on unchallenged by anybody as if it were a free good, as if there were no opportunity costs, as if it were not drawing resources away from other priorities. As Dr. Barry Bosworth testified:

You must realize that when you extend loan guarantee programs, the Government must replace the market. The Government must step in and do its own evaluation of projects before it extends the loan guarantee program. Then the question arises of whether or not in very many situations it is true that the Federal Government knows something that the private market doesn't know. Does the Government know that these are really good projects, but for some reason the private market is foolish. Although it wants to earn a profit, it simply cannot realize that these are really profitable undertakings.

When decisionmakers think that loan guarantees do not have an impact on the budget, a proposal may get inadequate public review, and serious distortions in the allocation of public resources may result. There are, of course, many ways in which the Government can affect the distribution of resources in the economy without the activity appearing in the budget. Taxation and regulatory powers are obvious examples. Most proposals affecting these, however, are subject to review in adversary proceedings, such as congressional hearings and the courts.

HIGH POLITICAL COSTS

Once a project is in operation the existence of a loan guarantee may significantly alter the bargaining position of the Federal guarantor agency. A major default would usually bring high political costs, even when a project was originally undertaken with broad public recognition that the Government was being exposed to significant risks. When such a default looms, a guarantor agency may be very reluctant to undergo the intense scrutiny of a congressional and media investigation. By quietly threatening default, the sponsor of a project could put great pressure on the Federal officials to develop a rationale for additional subsidies and other incentives in order to avoid the cost and embarrassment of a full Government bailout. Additional problems for the Government might also be created if important sectors of the economy have become dependent upon the output of the project. Even if the economics of the project were so unfavorable as to force a default, the Government may be politically unable to terminate the project.

CONSEQUENCES FOR THE PRIVATE SECTOR

ENCOURAGES DEFAULT

Loan guarantees also have a significant impact on the operating decisions of a participating private firm. As Dr. Bosworth pointed out in his testimony, "Although loan guarantees may encourage the initiation of a desired project, they also tend to increase the probability of default and premature project shutdown." This is especially true for firms with large net worth. The standard criterion for deciding to abandon a project once it is operative is whether or not the project's revenues cover its variable costs (that is, the total cost less such fixed charges as interest and amortization of debt). An operating project would ordinarily be continued as long as its revenues cover *variable costs* and make *some* contribution to payment of fixed charges. The only exception is if the entire corporation would be bankrupted by the fixed charges. However, with a loan guarantee, it might be profitable to abandon the project when it becomes apparent that revenues will not cover *total costs*, that is variable costs plus fixed charges. It is important, therefore, that the guarantee agreement be designed carefully so that it motivates the private participants in the project not to default precipitately.

WHO PAYS FOR PROJECT?

The Government's choice of a mechanism to stimulate investment in a particular project largely determines who pays for it. In any year, the level of the Federal deficit or surplus results from major political

decisions which are reached independently of decisions on individual programs. For fiscal year 1977, as an example, the President with his January Budget Message announced a projected deficit of \$43 billion and the Congress, in its First Budget Resolution, established a target deficit of \$50.8 billion. Both figures had great symbolic importance as summary statements of Federal fiscal policy. Each figure constrained the budget requests of executive departments or the actions of congressional committees. So when a major new activity is financed with on-budget expenditures—if the deficit remains the same—it will be “paid for” by diverting resources from competing governmental activities through spending cuts, or by diverting resources from private current consumption through increased taxes. Advocates of other priorities, therefore, will give the new proposal careful review.

When financing for a new project is obtained with loan guarantees, it is “paid for” by drawing resources out of the capital markets. This is true whether or not the guaranteed loan is purchased by the Federal Financing Bank. With the guarantee, a borrower becomes a price competitor for available credit. Unfortunately, this does not mean the resources are diverted from activities which from the perspective of the Government are of lower priority. The increased demand tends to drive up interest rates in sectors which lose capital. The operation of the private market decides which activities will now not get credit. Traditionally, the weakest competitors in periods of high interest rates have been those demanders of credit most dependent on long-term financing: housing and the capital needs of State and municipal government.

LIMITED RESOURCE

As is the case with Federal revenues, private credit is a limited resource. The wide-spread use of loan guarantees may largely convert a visible competition among Federal programs for fiscal resources into an invisible competition of Federal programs for private credit. The Federal use of loan guarantees, therefore, must be systematically evaluated by policymakers determining the impact of Federal Government on the economy. Each new loan proposal—especially if it is a Type-3 guarantee—should receive especially careful scrutiny.

Chapter V. TWO MAJOR ENERGY FINANCING PROPOSALS

Two major proposals to finance energy development may soon be before the Senate. They are the Nuclear Fuel Assurance Act (H.R. 8401) and the Synthetic Fuels Commercialization Program (H.R. 12112). These bills provide for loan guarantees and project guarantees. Many observers believe that the latter bill will require price guarantees as well.

This chapter discusses these two major energy financing proposals in order to provide background and specificity for the previous discussion of guarantee mechanisms. Chapter VII of this report will review the budgetary treatment of these two bills as it relates to the forthcoming Second Concurrent Resolution.

Uranium Enrichment

Uranium must be enriched before it can fuel nuclear power plants. Three U.S. uranium enrichment facilities now exist, all owned and managed by the U.S. Government but operated by private industry under contract.

Currently planned expansion of existing Government-owned enrichment facilities will increase U.S. capacity but ERDA indicates that this entire capacity has already been committed to customers—the equivalent of 208 domestic power plants and 121 foreign plants.

TWO ENRICHMENT TECHNOLOGIES

Two principal enrichment technologies have been developed: diffusion and centrifuge. To date, the gaseous diffusion process developed during World War II has provided all U.S. capacity. It is a mature, reliable process that has been used on a large scale for 30 years. The newer centrifuge process is anticipated to have several advantages over the diffusion method, and is generally considered to be the enrichment technology of the future. Nevertheless, because the centrifuge has not yet been commercially proven, the older diffusion process is expected to be used in the next enrichment facility constructed.

NEED FOR ENRICHMENT CAPACITY

With continued growth in electricity generated by nuclear fission, the eventual need for new enrichment capacity is clear, but the timing and magnitude of that need are not. How much additional enrichment capacity we need, and when we must have it depends on projections of nuclear power growth which can be either optimistic or pessimistic and on assumptions about the foreign markets to be served. Analysis by the Congressional Budget Office, however, suggests that the four private enrichment plants contemplated under H.R. 8401 will produce

more nuclear fuel than will be immediately needed but that this surplus will be used during the 1990's.

NUCLEAR FUEL ASSURANCE ACT

Enactment of the pending Nuclear Fuel Assurance Act (H.R. 8401), would permit private financing, construction, ownership, and operation of new uranium enrichment plants subject to action by the Appropriations Committee and to approval by Congress of each of the individual project guarantees. The bill would authorize ERDA to provide private industry with classified uranium enrichment technology, for which users would pay royalties. Private developers could purchase certain unique materials, services, and equipment from the Government on a "full-cost recovery" basis (i.e., ERDA would be reimbursed for all costs except certain R. & D. expenses recoverable through royalties). The Government would warrant that the enrichment technology would perform to specification. H.R. 8401 as amended on the House Floor, says that any future liabilities for which the Government would not be fully reimbursed shall be limited to the assurance that the technology will work. To ease start-up of the new private facilities, the Government could provide access to its enriched uranium stockpile, either purchasing production overruns if private customers were not ready to take delivery or providing stockpiled enriched uranium to customers at cost if initial private production were insufficient.

GOVERNMENT RESPONSIBILITY IN THE EVENT OF DEFAULT

To implement the warranties and to protect private lenders, ERDA would be authorized—if a particular private project faltered—to take over the plants, assume domestic assets and liabilities including project debt, and—depending on the reasons for failure—to compensate domestic equity investors. These warranties and conditions would be spelled out in cooperative agreements entered into by the private companies and ERDA and approved by Congress under the terms of the Nuclear Fuel Assurance Act.

The bill also directs ERDA to begin the work necessary to build an add-on diffusion plant at the existing Portsmouth, Ohio, facility, in addition to any private cooperative agreements and plants that may be approved.

GUARANTEES TO OVERCOME OBSTACLES

The guarantees authorized by the bill are designed to overcome three major obstacles to private development: classified technology, size of initial investment, and potential risks to investment. Warranties of Government technology would eliminate uncertainty about the performance of classified technologies. The other obstacles would be removed by the Government's agreement to take over a project and compensate investors, if necessary.

An agreement that the Government would, if necessary, assume the loan obligations of a project would remove the risks facing lenders and, simultaneously, enable the project to raise a large portion of invested capital through borrowing. That ability reduces problems arising from the size of the investment required.

The ability of a project to raise a large portion of its financing through debt that is unsecured by the general assets of the equity investors also reduces the risk faced by equity investors (stockholders). When firm contracts with customers ensure a steady stream of revenues upon project completion, the main risk to equity investors would be the possibility of losing their initial capital investment. A high debt/equity ratio made possible by guarantees would limit this risk because the maximum that equity investors could lose would be the relatively small equity investment.

INVESTMENT TAX CREDIT

The investment tax credit acts, in addition to the guarantees, to reduce even further the capital investment actually contributed by equity investors. Under some circumstances, tax benefits accruing to equity investors could exceed their investment in the project.

ERDA has received four proposals to construct uranium enrichment plants from firms anticipating utilization of the assistance that would be provided by the Nuclear Fuel Assurance Act. The existence of these proposals indicates that the incentives proposed in H.R. 8401 would be sufficient to stimulate private investment.

WHO SHOULD OWN THE ENRICHMENT PLANTS?

Underlying the issue of whether to enact the Nuclear Fuel Assurance Act is the broad question of who should construct and operate future enrichment facilities. Several options exist. They are Government ownership, cooperative arrangements with industry (which H.R. 8401 proposes), and mixed Government-private ownership. In addition, the existing enrichment plants could be sold to private interests or the question itself could be postponed beyond fiscal year 1977.

CASE FOR GOVERNMENT OWNERSHIP

The case for Government ownership rests, to a considerable extent, on the belief that the degree of competition required to realize the potential benefits of private ownership is unlikely to develop and that, despite the large initial outlays, additional Federal enrichment activities would ultimately return large revenues to the Government. Another form of Government ownership would be to create a Government-owned corporation to enrich uranium. The case for this suboption rests on the desirability of retaining Government ownership of a Government-developed technology and revenues from it, while avoiding large direct Federal budget impacts and realizing some of the efficiencies associated with corporate (versus Government) business practices.

If the Government were to own all new capacity (here assumed at 6 plants by year 2000), substantial annual outlays, according to CBO, would be required to finance construction. The annual outlays will rise to a peak of approximately \$2.7 billion by 1984 and diminish thereafter. Annual revenues from sales would also increase but would not exceed annual outlays until 1988. Cumulative revenues would exceed cumulative outlays, including assumed interest in 1983.

CASE FOR PRIVATE OWNERSHIP

The case for private ownership rests generally on the presumption that broad efficiencies characterize private undertakings, and on the philosophical belief that production of materials is an activity best suited in our society to the private sector.

If private industry were to own all new capacity, no Federal outlays beyond those currently planned would be required—assuming contingencies would not occur—and no revenues from new sales would be received. However, the Government would receive royalties for the use of Government-owned technology. If, for example, a royalty rate were negotiated at 3 percent of gross revenues for 17 years, each large private facility could pay the Government more than \$400 million in cumulative royalties during those years, and annual revenues from six plants could reach \$150 million by the early 1990's.

However, in order to encourage private sector ownership the Federal Government could be at risk for amounts ranging up to \$8 billion (\$1.4 billion for the diffusion plant, \$1 billion for each smaller centrifuge plant, plus contingencies and an inflation factor) from initiation of construction to sometime after the date of full commercial operation. While ERDA believes default is very unlikely it is a possibility and hence a risk.

MIXTURE OF PRIVATE/GOVERNMENT OWNERSHIP

The case for a mixture of private and Government-ownership rests on the belief that the need for the first new increment of capacity in the mid-1980's is such that planning and construction should begin in the very near future and that Government, with its experience in building and managing three existing facilities using a proven technology, is in the best position to own this next facility, which is likely to be the last one using this older technology. Private industry would then assume responsibility for providing other future additions to capacity using new technologies. This option would be provided by the Nuclear Fuel Assurance Act which directs ERDA to construct another enrichment plant in addition to any private facilities.

If ownership were mixed, with the Government owning the next facility and the private sector owning further additions, the Government would receive both royalties and enrichment revenues. Royalties would reach about \$125 million annually by the early 1990's. Initial Government outlays would reach a maximum of \$0.9 billion in 1983, with the cumulative debt (including assumed interest) repaid by 1993, and cumulative net revenues reaching over \$4 billion in year 2000.

An additional option would be to delay any decision on future enrichment facilities for at least 1 year. Since the Government-owned additional plant has been authorized independently of H.R. 8401 the next diffusion plant would proceed even if the action on the bill were to be delayed. Thus, the primary effect on enrichment development might be to delay initial work on centrifuge facilities.

A final additional option would be to sell existing plants to private corporations. If this alternative were considered in lieu of the Nuclear Fuel Assurance Act, it would clearly settle the issue of whether uranium enrichment facilities should be private. It would require the Federal Government to forego revenues from the existing plants which, from 1976 through 1990, could total \$9.2 billion. In place of this revenue source would be the value of the plants to be sold.

This alternative alone, however, would not address the issue of providing for future increases in enrichment capacity.

Synthetic Fuels

Synthetic fuels are usually considered to include gas and oil made from such sources as coal, oil shale, or urban or other waste, but not gas made from oil. Production of such synthetic fuels would be eligible for support under H.R. 12112 which is now being considered in the House of Representatives.

PRESENT TECHNOLOGY

Several processes for producing synthetic fuels have been developed. Some of the older processes have been demonstrated to work, and have been put to use in foreign countries. However, much of that production is subsidized, and the scale of production is considerably smaller than that envisioned for programs proposed in the United States.

ERDA conducts an extensive research program aimed at developing "second-generation" processes for producing synfuels that promise to be more economically attractive, efficient in use of resources, and environmentally acceptable. Nevertheless, such technologies are not yet available, and economics of existing processes have not, in the past, been sufficient to induce industry to produce synthetic fuels commercially in the United States.

COSTS OF PRODUCING SYNTHETIC FUELS

Current estimates of the cost of producing synthetic fuels exceeded by a considerable margin the prices at which competing fuels can now be purchased. For example, Dr. William McCormick, Director of ERDA's Office of Commercialization, testified at the hearings of the Energy Task Force that while high-Btu pipeline gas might cost \$3.25 to \$3.50 per million Btu, the highest price at which natural gas now sells (in intrastate markets) is under \$2 per million Btu. Mr. Frank Cannon of the Koppers Company agreed, stating that for 4 years Koppers which has 17 plants overseas has tried to market its gasification process in the United States without success, because the cost of producing gas with that process was too high for potential U.S. customers at current prices.

RELEVANCE OF FUTURE PRICE/COST TO PROFITABILITY

However, as Dr. McCormick remarked in his testimony, the relevant comparison is between future energy prices and future costs of synthetic fuels. If energy prices were to increase rapidly, synthetic fuel production could become a profitable enterprise. Studies performed for ERDA have indicated that it is unlikely that energy prices will rise rapidly enough to make synthetic fuel production profitable before 1985, but that such market forces probably would create a private synthetic fuel industry after 1985.

GOALS OF A SYNTHETIC FUEL PROGRAM

In proposing a synthetic fuels commercialization program, the Administration specified three goals for 1985: (1) development of tech-

nical, environmental, and economic information on synfuel production processes; (2) accumulation of experience with synfuel production in American industry; and (3) production of significant quantities of synthetic oil and gas. To achieve these goals, the President initially proposed price guarantees, loan guarantees, and construction grants designed to achieve an interim synthetic fuel production target equivalent to 350,000 barrels of oil per day, with an option of expanding the program to 1 million barrels per day by 1985. The first part of the Administration's program, \$6 billion in loan guarantees, was defeated in the House of Representatives last year. This year the Administration is requesting a smaller \$2 billion program of loan guarantees.

The relative importance given to the production and the information goals can influence the desirable size of a synthetic fuel program. The information objective might be achieved, according to CBO, with a program too small to increase domestic energy production significantly. That objective could be pursued effectively if a target production of 350,000 barrels per day by 1985 were chosen, but substantial information might also be generated by a smaller program. One with a target of 125,000 barrels per day would allow construction of one plant to produce each type of fuel included in the larger program. To achieve a 125,000 barrel per day target might require \$1.5 billion in loan guarantee authority, \$1.7 billion in price guarantee authority, and \$230 million in construction grants. Such a program might support construction of five plants.

DIFFERENT VERSIONS OF SYNFUELS BILL

Congress is considering a variety of options for assistance to synthetic fuel production. The version of H.R. 12112 reported by the Committee on Science and Technology of the U.S. House of Representatives would provide only *loan* guarantees as an incentive. The House Banking Committee and the House Commerce Committee reported amendments to H.R. 12112 that would add authorization of price guarantees. The Commerce Committee amendments also altered the scope of assistance by excluding all fuels produced from coal from receiving guarantees and by allowing synthetic gas at prices higher than those allowed by the Federal Power Commission if customers can be found.

DIRECT GOVERNMENT OWNERSHIP

If a decision were made to restrict the scale of synfuel production while pursuing the information goal vigorously, direct *Government ownership* of a small number of plants constructed and operated by private contractors (much like present uranium enrichment plants) might be desirable. Such an approach appears well-suited to dealing with environmental and socioeconomic consequences and to acquiring public knowledge of synfuel technology and economics. On the other hand, it would not foster creation of a private synfuels industry, but would put the Government in the oil and gas business (directly competing with private industry) if high production targets were chosen.

Alternatively, the Government could construct synthetic fuel plants and then sell or lease them to private industry, as suggested by Senator Bellmon. Such an approach would remove the "front-end" risks of

constructing synthetic fuel plants, because plants would not be transferred to the private sector until they were completed and licensed successfully. However, if the costs of producing synthetic fuels were to prove to be higher than the selling price of alternative fuels, the Government would be unable to recover its entire cost through sale or lease to private investors. Resale "at a discount" would then provide a mechanism through which the Government would provide an adequate subsidy to induce the private sector to produce synthetic fuels.

Government cost-sharing with private industry could similarly reduce the initial cost borne by private enterprise, and thus reduce the price private industry would have to charge to recover its investment and earn an adequate profit.

According to CBO, to construct the same plants included in the program budget provided by ERDA in testimony on the loan guarantees of H.R. 12112 would cost about \$5.9 billion; those outlays would occur between 1977 and 1985. If current projections of prices and costs are correct, revenues would not be sufficient to repay this investment with interest: the shortfall would probably be on the order of \$1 billion over the life of the plants.

DEVELOPMENT OF NEW TECHNOLOGIES

ERDA is developing several advanced synfuels processes that could improve the economics, reliability, and environmental impact of syn-fuel processes. Pilot plants for several second-generation processes are under construction or operating, and a request for proposal has been issued for a demonstration-scale plant to produce synthetic boiler fuels from coal.

In many cases adequate private investment in research is not forthcoming without Government support since the enterprise which bears the costs and risks of research cannot share in its full social benefits. In the commercialization stage the rewards to private enterprise may more closely approximate the social benefits. If these considerations apply in the case of synthetic fuels, Congress may find it appropriate to emphasize Federal involvement in support of research while giving responsibility for commercialization to private enterprise.

DEMONSTRATION PLANTS

The President's budget for 1977 proposed authorization of three new demonstration plants: one designed to convert high-sulfur coal to clean boiler fuel, one to convert coal to a "high-Btu" gas of quality sufficient to ship by pipeline, and one to convert coal to a "low-Btu" fuel gas for electric utilities and larger industrial users.

These demonstrations could require up to a total of \$400 million in outlays by the late 1980's. Such projects would not be completed before 1985. Consequently, the new technologies probably would not be available for inclusion in synthetic fuel plants constructed before 1985.

By the year 2000, ERDA anticipates that advanced technologies will lead to production of 2 million barrels per day of oil from coal and possibly 10 quads (5 million barrels per day equivalent) of gas from coal.

Further research and development into new technologies for synthetic fuel production would provide a better technical basis for establishment of a commercial synthetic fuels industry.

If it is decided that a commercial synthetic fuels industry should be established immediately, a choice must be made among Government-ownership, provision of loan guarantees alone, or provision of loan and price guarantees.

OPTIONS TO REDUCE RISKS

Loan guarantees can reduce "front-end" risks, especially those due to uncertainty about the cost or performance of new technologies. Government construction of a synthetic fuel plant, with later sale to a private firm, can perform a similar service. If concern about the market on which synthetic fuels would be sold is an obstacle to private development, such devices may be insufficient. Price guarantees, set at an appropriate level, could be effective in removing such an obstacle. Government construction of a plant then leased to the private sector could, depending on lease terms, reduce both regulatory and market risks.

Chapter VI. BUDGETARY TREATMENT OF GUARANTEE MECHANISMS

The Budget

As noted by the 1967 report of the President's Commission on Budget Concepts the budget presents the financial plan of the Federal Government. This plan includes appropriations, receipts, expenditures, net lending, the means to finance a budget deficit (or the way to use a budget surplus) and information about Government borrowing and loan programs.

The budget is a "road map" of where we are going. It is both a statement of national priorities and an instrument which can be used to reorder those priorities. The budget is also an element of economic policy and a tool to shape that policy. Finally, the budget of the United States Government tends to reflect boundaries of activity between the private and Government sectors and between the States and the National Government.

The budget should reflect the full scope of Federal activity. Action by the private sector ought not to appear in the budget, but the various financial transactions of the Government, including its liabilities, should be reflected in some way. Otherwise, policymakers in both the Executive and the Legislative Branches may be unable to assess the full impact of their decisions.

CRITERIA FOR A BUDGET

It is important that the budget fully disclose the nature and extent of the Government's liabilities. This includes contingent liabilities as these may have a significant budgetary impact. Moreover, it would be useful to know the beneficiaries of the resulting assistance or subsidies. Certain types of financial incentives will assist the consumer, some are designed to assist industry, and some would shift costs to one or the other.

In addition to reflecting the full scope of Federal activity, the budget should be precise in terms of amounts and clear in terms of concepts. Distinctions between budget authority and outlays, between contract authority and borrowing authority, between potential liabilities and actual expenditures ought to be recognized. "Federal spending" takes many shapes and to lump them all together at times ignores the complexity of budgetary concepts which themselves seek only to reflect the complex reality of public policymaking.

At the same time the budget should be understandable. With knowledge of a few basics, policymakers ought to be able to interpret the budget. The vast sums and the technical complexities must not obscure the fact that the budget is a tool for decisionmakers. It is also an instrument by which the general public can become informed as to the

scope and direction of public policy. Unless the budget is understandable it cannot serve this important function.

EFFECTS OF GUARANTEE

The various mechanisms to finance energy development all have an impact on the budget. Loan guarantees, price guarantees, and project guarantees are integral parts of the Government's financial plan. How the budget accounts for all guarantees will affect the amounts in the Fiscal Year 1977 Second Concurrent Resolution and future years, and may in the long run, affect the nature of the congressional budgetary process itself.

Loan Guarantees

"The authority to insure or guarantee the indebtedness incurred by another person or government" is specifically excluded from the definition of "budget authority" provided in section 401(c)(2) of the Congressional Budget Act of 1974. Loan guarantees, therefore, have an "off-budget" characteristic which distinguishes them from most alternative methods of financing public objectives. Prior to passage of the Congressional Budget Act, many programs had been designed with "backdoor" spending mechanisms that provided budget authority without advance action by appropriations committees. In his testimony before the Committee's Energy Task Force, James L. Mitchell, an Associate Director of OMB, noted that in recent years there have been an "astonishing" number of loan guarantee proposals. "We have moved," Mr. Mitchell said, "from the old backdoor on appropriations into the guarantee technique."

OUTSIDE BUDGET TOTALS

The President's Commission on Budget Concepts report, which recommended that loan guarantees be reflected outside budget totals, stated that these guarantees were likely to become increasingly important. The Commission recommended that loan guarantees be summarized as a note in the budget and that serious consideration be given to "new forms of coordinated surveillance" of such guarantees. As stated in the report:

Otherwise, an appropriate choice in terms of effective resource allocation may be difficult to achieve and the inclusion of direct loans in the budget may encourage an undue expansion of guaranteed and insured loans to avoid being counted in the budget.

BUDGET TREATMENT OF LOAN GUARANTEES

At the Task Force hearings Stanley Lewand, a vice president of Chase Manhattan Bank, noted that Government support of private ventures such as loan guarantees "is not without cost to the taxpayers who assume all or part of the business risk in lieu of the venture's beneficiaries." Now that "total primary guaranteed loans (adjusted)" outside the budget total \$174.6 billion a major problem is how best to include that cost to the taxpayers in budget decisions. The Task Force hearing brought to light a conflict between the needs of budgetary control and the needs of economic analysis. Unless the cost of a program

appears on the budget so that the program competes against other claims upon the Government's financial priorities, or the program is subject to some other adversary proceeding, it may escape adequate congressional review. Loan guarantees are therefore of concern to those interested in control. Philip S. Hughes, Assistant Comptroller at the General Accounting Office stated GAO's position "that there should be full disclosure of the budget impact of all existing and proposed Federal credit and credit support programs. Only by full disclosure can the full impact of such programs and the trade-offs with other Federal programs be evaluated." On the other hand, Dr. Arnold Packer, the Budget Committee's Chief Economist, stated that economists ordinarily exclude Government lending from those activities which should appear in the Federal budget. Treating loan guarantees as a Federal outlay, he felt, would provide a seriously exaggerated picture of the size of the Federal sector in the economy. "I would think that it would be distorting from a macro-economic point of view to put the lending in the budget," said Dr. Packer. "Now if the Federal Government is going to operate a synthetic fuels plant or a nuclear enrichment plant, then it is a Federal activity and it belongs there, but not if it is the guarantee area or even in the lending area."

Another way to treat loan guarantees in the budget would be to estimate each year the amount of Federal payments likely to result from loan guarantee defaults and have that estimated amount appear in the budget as budget authority, accompanied by the associated estimate of outlays. The full exposure of the guarantees would not be reflected in the budget. Only the amount of expenditures that we anticipate will be needed would appear. For example, if a \$2 billion solar energy loan guarantee program were established and were expected to have a 10-percent rate of default, the budget would show \$200 million. The advantage of this approach is precision. Only the amount that is estimated to be necessary and that in all likelihood will be spent appears in the budget totals. The disadvantage is that the extent of the Federal liability is not shown nor is the economic impact of the guarantee upon the private sector. The Government might have to spend far more than the amount estimated to cover defaults than is shown in the budget. The budget thus would not reflect the complete potential for Federal spending.

This approach is how some (but not all) loan guarantee programs have been treated in the budget. In the case of the \$2 billion synthetic fuels program, the Administration has estimated a default rate of 25 percent and is requesting budget authority of \$500 million that would appear in the budget to cover anticipated spending.

TREATMENT OF ASSUMED DEBT

If a default were to occur when Federal loan guarantees have been extended, the Government might well take over operation of the facility and assume its assets and liabilities. These liabilities will probably include debt. Whether this debt, when it is held by the Government, becomes part of the Federal debt subject to limitation that is reflected in the budget and shown in the concurrent resolutions of the Congressional budget is uncertain. The Task Force hopes that this issue can be reviewed in the Committee's major study of Federal financial guarantees.

Price Guarantees

Price guarantees do not pose too great a problem in terms of budgetary treatment. Authority to implement a price guarantee program is requested through the normal authorization and appropriations process. If approved, an estimate is made of the program's costs, and the anticipated amount of budget authority is then provided through appropriations. This budget authority appears in the budget totals. One issue that does arise with such programs is in what year the budget authority should be carried? Should it be carried in the year the program is enacted? Or should it be carried in the year that the price support payments are required? The principle that budgetary costs should be acknowledged when the decision to establish a program is made argues in favor of showing the budget authority up front. Outlays of course would appear in the year they occurred. But the difficulty with estimating accurately what level of price supports might be required several years hence argues in favor of carrying the budget authority in the year for which it is necessary.

BUDGETARY TREATMENT VS. BUDGETARY CONTROL

The difficulty with programs that support prices is not budgetary treatment but rather budgetary control. Price guarantees can be entitlement programs. Once in place they can make demands upon the budget that must be honored. Given the unstable nature of prices, particularly in the energy area, these demands can be considerable.

Project Guarantees

Project guarantees are intended to protect participants in a venture from the failure of a particular project. Guarantees are extended not to the financial institutions lending capital to the ventures but to the project itself. Much of the analysis in this staff report on the affect of loan guarantees applies equally well to project guarantees. But the liabilities incurred by project guarantees—unlike those of loan guarantees—are not specifically excluded by law from the budget totals. Because project guarantees are relatively rare, a discussion of their budgetary treatment can best occur in reference to a specific guarantee. The next chapter of this paper in part will discuss the budgetary treatment of the guarantees contemplated by the proposed Nuclear Fuel Assurance Act.

Chapter VII. THE SECOND CONCURRENT RESOLUTION

In the First Concurrent Resolution the Committee assumed \$5.1 billion in budget authority and \$4.2 billion in outlays for energy. These amounts were considerably above what the President had requested and reflected the Committee's view that energy ought to rank as an important budgetary priority. However, no provision was made in the Resolution for funding off-budget energy proposals. This exclusion was not meant to prejudice Senate action. The Committee simply believed that sufficient information was not then available to review these proposals. As stated in the report:

... by not including any funds in the First Concurrent Resolution for the President's off-budget proposals, the Committee does not preclude any action on the specific proposals if they are brought to the Senate Floor. Both the off-budget issue and the specific program proposals themselves could then be reviewed in light of the First Concurrent Resolution and any available information. If significant on-budget expenditures were deemed appropriate by the Congress, an adjustment could be made by the Second Concurrent Resolution.

Since passage of the First Concurrent Resolution, legislation relating to both uranium enrichment and synthetic fuels has moved forward. The Committee must now determine in the Second Concurrent Resolution whether or not to adjust Function 300 targets to accommodate such legislation and, if those targets are to be adjusted, what budgetary treatment of budget authority and outlays is appropriate.

AVAILABLE OPTIONS

A number of options for treating the Nuclear Fuel Assurance Act and the synthetic fuels commercial demonstration program—if they are enacted—are available to the Committee. Each of these options is defensible from a technical viewpoint and yet each one has a very different effect on functional totals. In addition, the selection of one or another of the available options may establish a precedent.

Uranium Enrichment Scoring Options¹

The \$8 billion in guarantees contemplated in H.R. 8401 could be treated in a number of ways. The Committee could choose to:

—Score the full \$8 billion as budget authority at the time of the appropriation. This approach is akin to scoring the full exposure of a loan guarantee program.

¹ This section deals exclusively with the \$8 billion in contract authority authorized in H.R. 8401 in as much as the \$255 million authorized in section 4 of the bill for a new Federal enrichment plant is a traditional type of authorization. If the bill were enacted and funds were appropriated, the amount provided would appear on budget as budget authority with resulting outlays.

- Score the full value of each contract with a private venture at the time of ratification of each individual contract.
- Score partial amounts, representing the actual Government liability year-by-year, as the liability grows. For example, if all the contracts are approved, the first year of liability would be approximately \$300 million.
- Score some fraction of the \$8 billion as budget authority based upon an estimated rate of default greater than zero. This is the procedure presently contemplated by the Administration and the House Budget Committee for treating the synthetic fuels bill.
- Score nothing at all because the liabilities are contingent.

SCORE NOTHING AT ALL

The position of the Administration is that no budget authority should appear since budget authority as defined in the Budget Act is authority to enter into obligations which *will* result in future outlays. If this approach is followed, Function 300 targets for fiscal year 1977 would require no adjustment. In the event the default occurred in some future year, that year's budget authority and outlay would have to be adjusted to reflect the actual level of Federal liability. It should be noted that this off-budget treatment is, in the view of the General Accounting Office, permissible but undesirable. In an opinion requested by SBC staff, the GAO stated that while the authority authorized in H.R. 8401 did not establish "budget authority" within the meaning of the Budget Act, the authority should be reflected in the budgetary totals if Congress is to achieve the maximum effectiveness of the new budget process.

SCORE SOME FRACTION

The case for scoring some fraction of the project guarantees is predicated on the assumption that some defaults will occur and future outlays will be required. In this instance, the Committee's final action could reflect the probability of failure associated with each of the component elements of the package. The components include the construction of one new gaseous diffusion plant and three centrifuge plants. It appears unlikely that the gaseous diffusion plant will fail for technological reasons. Therefore, a case can be made for not scoring the \$1.4 billion of liability associated with its construction in the SCR. In the case of the three centrifuge process plants, however, some technological risk does exist since the process, at the commercial scale, proposed is new. If the Committee wished to show in the budget the amount of liability under H.R. 8401 associated with the gas centrifuge technology, \$3 billion would be added to the budget totals.

Centrifuge plants are constructed as a series of "cascades". When the first such "cascade" is complete, the technological risk will have been resolved. At this time, success or failure is evident. Additional "cascades" need not be constructed. In the event that the process is not successful, construction could be suspended and the project guarantees paid out. The amount of Federal exposure under H.R. 8401 necessary to support the development of the first "cascade" is estimated to be approximately \$400 million per centrifuge facility. If, as is planned three facilities, are extended guarantees and all three centrifuge plants

fail, the Federal liability would total \$1.2 billion. The Committee could, if it wished show this amount in the budget totals.

SCORE PARTIAL AMOUNT

Another option for the Committee would be to score a partial amount of the \$8 billion in project guarantees contemplated by the Nuclear Fuel Assurance Act representing the actual liability on a year-by-year basis. Because the \$8 billion constitutes the total liability over a period of several years, reflecting the \$8 billion in the budget for any one year might distort the budget totals and exaggerate the liabilities. The amount of the Federal liability for the one year in question could be shown instead. If all the contracts anticipated under H.R. 8401 were reflected in the budget in this way, the liabilities for fiscal year 1977 would total approximately \$300 million.

SCORE FULL VALUE OF EACH CONTRACT

Another budgetary treatment option for the Committee would be to score the full value of each contract with a private venture at the time of each individual contract. The \$8 billion authorized in H.R. 8401 is the upper level of contingent liability that the Government could conceivably assume with regard to the four private enrichment plants expected to request project guarantees. Of the \$8 billion, \$1.4 billion is attributed to the one gaseous diffusion plant being planned, \$3.0 billion is attributed to three centrifuge projects, and \$3.6 is attributed to contingencies and inflation. The budget could reflect the liability of the Government assumed through the project guarantees for each of the four enrichment projects or as many as are approved by Congress.

SCORE FULL AMOUNT—\$8 BILLION

Another option would be for the Committee to score on budget the full amount of the liabilities contemplated by the proposed Nuclear Fuel Assurance Act. Thus \$8 billion in budget authority—the upper level of liability—would be added to the budget totals at the time of the Second Concurrent Resolution. The Administration believes this option to be unwise because it artificially inflates budgetary totals while distorting the macroeconomic impact on the budget. As noted above, the Administration also believes that this option is unnecessary given the specific definition of budget authority in the Budget Act. Nevertheless the Committee might want to exercise this option because the \$8 billion is the amount that the Federal Government is obligated to pay if a series of events concluding in the default of all the project guarantees were to occur.

When to Score Uranium Enrichment Options

In addition to the problem of what or how much to score in order to accommodate legislation such as H.R. 8401, the Budget Committee must determine when to score the required budget authority if at all. In the event that budget authority is required, should that budget authority be available at the time the Appropriations Committee takes action or at the time the contract is signed and the liability created? Or should budget authority be scored only when an actual Federal payment is required? It may well be most appropriate to score the budget authority at the time the resolution approving the individual

contract is passed for it is at this time that the liability, however contingent, is established. In any event, accommodating current legislation dealing with uranium enrichment poses the questions of what to score and when to score.

Synthetic Fuels Scoring Options

Many of the problems relating to how much and when to score budget authority for uranium enrichment are not present in the legislation relating to Federal guarantees for the development of a commercial synthetic fuels industry. H.R. 12112 provides for loan guarantees in the amount of \$4 billion and allocates that amount equally in fiscal years 1977 and 1978. S. 2864, a version of the bill that passed the Senate last year, provides for \$6 billion in guarantees allocated all in fiscal year 1977. For the loan guarantees in the House bill, it has been suggested that \$500 million in 1977 budget authority be included in the budgetary totals subject to action by the Appropriations Committee. This amount represents a default reserve of 25 percent based upon a \$2 billion loan guarantee program. This treatment of loan guarantees as budget authority, which the Administration accepts, would appear to be consistent with the Budget Act although guarantees have at times been treated differently in the past. In marking up the First Concurrent Resolution the House Budget Committee also accepted this budgetary treatment of loan guarantees and assumed \$500 million in budget authority for a synthetic fuels commercialization program.

PRICE GUARANTEES

Problems peculiar to synthetic fuels development and the legislative initiatives which support it are related to price guarantees. This is so whether or not the price guarantees are specifically contemplated in synthetic fuels legislation. Legislation reported by both the House Banking, Currency and Housing Committee and the House Committee on Interstate and Foreign Commerce contemplates varying levels of price guarantees over the 30-year life of the facility. No price guarantees are mentioned in the Science and Technology Committee's version of the bill. Yet there is little doubt that synthetic fuels, in the short run, will fail to be price competitive with either petroleum or natural gas. Hence some type of price guarantee seems inherent with synthetic fuels commercialization. The Administration's initial \$6 billion synthetic fuels loan guarantee proposal recognized this for it specifically contemplated \$4.5 billion in price guarantees for which authority was to be requested later on.

The exact time at which energy from synthetic sources will become price competitive is highly conjectural. Therefore the level and duration of the financial commitments associated with such price guarantees cannot be calculated. And their budgetary treatment thus becomes difficult. It may be that the Committee wishes to have budget authority scored for the year in which price payments are made, or the Committee may wish to estimate the amount in the budget for the year in which the synthetic fuels program was established. In either case members of the Committee and of the full Senate as well will want to realize that some form of price assistance may be necessary for the proposed synthetic fuels programs.